

### **REMARKS**

This Amendment is in response to the Office Action mailed August 2, 2004. The Office Action rejected claims 52 and 53 under 35 U.S.C. §101, and rejected claims 30, 39-44, 52 and 53 under 35 U.S.C. §103. Claims 52 and 53 have been amended. Claims 30, 39-44, 52, and 53 remain pending in the application. Reconsideration in light of the amendments and remarks made herein is respectfully requested.

#### **Specification**

Applicants have amended the specification to remove references to specific claim numbers. No new matter has been added.

#### **Rejections Under 35 U.S.C. § 101**

The Office Action rejected claims 52 and 53 as containing non-statutory subject matter under 35 U.S.C. § 101. In particular, the Office Action states that a computer listing, per se, is not statutory subject matter because it is not a physical thing nor a statutory process.

Applicants have amended claims 52 and 53 to recite "A machine-readable medium that provides instructions, which when executed by a processor, cause the processor to perform operations comprising... ." This places the claim in Beauregard form and is statutory subject matter. (*Warmerdam*, 33 F.3d at 1361; *In re Sarkar*, 588 F.2d 1330, 1333).

#### **Rejections Under 35 U.S.C. § 103**

The Office Action rejected claims 30, 39-44, 52, and 53 under 35 U.S.C. 103(a) as being unpatentable over *Java!* by Tim Ritchey in view of *Compilers: Principles, Techniques and Tools*, by Alfred V. Aho et al.

Applicants traverse the rejection in its entirety.

The Office Action alleges that the present invention can be realized by simply splitting Aho's compiler into a control flow analyzer part and a code generator part. (Para. 12-14). Applicants submit that simply splitting Aho's compiler into a control flow analyzer and a code generator fails to teach the invention as claimed. First, the Java system cited in Aho does not execute a JavaVM code as is, but converts the JavaVM code prior to the execution, so that a target system can execute the code. This is distinct from the invention where a virtual machine instruction sequence is generated by the compiler to be executed by a virtual machine, without converting. Conventionally, Java does not include a function equivalent to the present invention.

As described in page 162 of "Java Developer's Reference" by Mike Cohn et al. (Sams.net Publishing, 1996), "The Java Virtual Machine, which is a component of the runtime system, is responsible for interpreting the bytecodes and making the appropriate system-level calls to the native platform. It is at this point where platform independence is achieved by Java: the bytecodes are in a generic form that is only converted to a native form when processed by the Virtual Machine." Thus, unlike the present claimed invention where the code is not converted prior to execution, conventional Java bytecodes must still be converted to a native code when processed by a virtual machine.

Further, "Once the Java code has been compiled, and an end user download it, it must then be interpreted" as described in page 327 of "Java!" by Tim Ritchey (New Riders, 1995).

Similarly, in page 328 of "The Compilation of Code" in "Java!", "The only difference between the Java compiler and other compilers is that the specific machine that would normally run the compiled code doesn't exist in Java."

Moreover, in the first chapter of "Teach Yourself Java in 21 Days" by Laura Lemay et al (Sams.net Publishing, 1996), Figures 1-3 describe that only one Java bytecode is executed in multiple Java runtime environments.

On the other hand, Aho discloses in Section 9.2, THE TARGET MACHINE, that "Familiarity with the target machine and its instruction set is prerequisite for designing a good code generator." In other words, Aho's compiler has to specify the target machine, and it is not possible for Aho to achieve platform independence in the runtime system. This is limitation is typical of conventional Java compilers as described in the figures 1 and 2 in the first chapter of "Teach Yourself Java in 21 Days". By contrast, the Java system of the present invention achieves platform independence in the runtime system without specifying a target machine.

As described in page 1, lines 6-22 in the present specification, the virtual machine and the compiler according to the present invention utilize a platform independent Java virtual machine. This is patentably distinct from the cited prior art, such as Aho, where the compiler must know the specific target machine prior to compiling.

Furthermore, as described in the present specification and claimed, the method of storing a VM code according to the present invention is different from the conventional method of storing a VM code in the conventional Java system and achieves an exceptional effect. As recited in the independent claims of the present invention, the compiler generates the basic blocks, transmits them, and are stored for the virtual machine. That is, because of the way the basic blocks are generated and stored the present claimed invention does not have to perform the division into the basic blocks in the "runtime activities" at all. Unlike the cited prior art, the present claimed invention does not require recreation or generation of the basic block by the virtual machine during execution.

Therefore, Applicants submit that Claims 30, 39, 52, and 53, as well as all dependent claims of the present application are patentable over Aho and Ritchey.

Applicants respectfully request that the 35 U.S.C. § 103 rejections over Aho and Ritchey be withdrawn.



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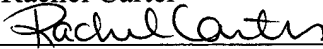
**CONCLUSION**

In view of the amendments and remarks made above, it is respectfully submitted that the pending claims are in condition for allowance, and such action is respectfully solicited. Authorization is hereby given to charge our Deposit Account No. 19-2814 for any charges that may be due. Furthermore, if an extension is required, then Applicants hereby request such an extension.

Respectfully submitted,

I hereby certify that this document is being deposited on October 19, 2004 with the U.S. Postal Service as first class mail under 37 C.F.R. 1.8 and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313

By: Rachel Carter

  
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Signature

Snell & Wilmer, L.L.P.

  
\_\_\_\_\_  
Julio Loza  
Registration. No. 47,758  
SNELL & WILMER L.L.P.  
1920 Main St., Suite 1200  
Irvine, CA 92614  
Telephone: (949) 253-4924

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